

ABSTRACT

An induction motor drive system and method estimates a motor power factor based on the AC power output to the motor phase windings and estimates the rotor speed based on the estimated power factor. The estimated rotor speed is compared to a rotor speed command signal to generate a speed error, and the voltage and frequency input to the motor are adjusted in response to the speed error. Rotor speed is estimated based on estimated rotor slip, which is estimated based on the applied voltage, frequency, estimated power factor and estimated motor power.